Operator's Manual

CRAFTSMAN®

12½"
PLANER/MOLDER

Model No.
351.233831

CAUTION: Read and follow all Safety Rules and Operating Instructions before First Use of this Product.

Sears, Roebuck and Co., Hoffman Estates, IL 60179 U.S.A.

8507.02 Draft (08/10/97)

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WARRANTY

FULL ONE YEAR WARRANTY ON CRAFTSMAN 12½" PLANER/MOLDER

If this Craftsman Planer/Molder fails due to a defect in material or workmanship within one year from the date of purchase, contact the nearest Sears in-home major brand repair service in the United States, and Sears will repair it, free of charge.

If this planer/molder is used for commercial or rental purposes, this warranty will apply for 90 days from the date of purchase.

This warranty applies only while the product is in the United States. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Sears, Roebuck and Co., Dept. 817WA, Hoffman Estates, IL 60179

SAFETY RULES

WARNING: For your own safety, read all of the instructions and precautions before operating tool.

CAUTION: Always follow proper operating procedures as defined in this manual even if you are familiar with use of this or similar tools. Remember that being careless for even a fraction of a second can result in severe personal injury.

BE PREPARED FOR JOB

- Wear proper apparel. Do not wear loose clothing, gloves, neckties, rings, bracelets or other jewelry which may get caught in moving parts of machine.
- Wear protective hair covering to contain long hair.
- Wear safety shoes with non-slip soles.
- Wear safety glasses complying with United States ANSI Z87.1. Everyday glasses have only impact resistant lenses. They are **NOT** safety glasses.
- Wear face mask or dust mask if operation is dusty.
- Be alert and think clearly. Never operate power tools when tired, intoxicated or when taking medications that cause drowsiness.

PREPARE WORK AREA FOR JOB

- Keep work area clean. Cluttered work areas invite accidents.
- Do not use power tools in dangerous environments. Do not use power tools in damp or wet locations. Do not expose power tools to rain.
- Work area should be properly lighted.
- Proper electrical receptacle should be available for tool. Three prong plug should be plugged directly into properly grounded, three-prong receptacle.
- Extension cords should have a grounding prong and the three wires of the extension cord should be of the correct gauge.
- Keep visitors at a safe distance from work area.
- Keep children out of workplace. Make workshop child-proof. Use padlocks, master switches or remove switch keys to prevent any unintentional use of power tools.

TOOL SHOULD BE MAINTAINED

- Always unplug tool prior to inspection.
- Consult manual for specific maintaining and adjusting procedures.
- Keep tool lubricated and clean for safest operation.
- Remove adjusting tools. Form habit of checking to see that adjusting tools are removed before switching machine on.
- Keep all parts in working order. Check to determine that the guard or other parts will operate properly and perform their intended function.
- Check for damaged parts. Check for alignment of moving parts, binding, breakage, mounting and any other condition that may affect a tool's operation.
- A guard or other part that is damaged should be properly repaired or replaced. Do not perform makeshift repairs. (Use parts list provided to order replacement parts.)

KNOW HOW TO USE TOOL

- Use right tool for job. Do not force tool or attachment to do a job for which it was not designed.
- Disconnect tool when changing blades.
- Avoid accidental start-up. Make sure that the switch is in the "off" position before plugging in.
- Do not force tool. It will work most efficiently at the rate for which it was designed.
- Keep hands away from moving parts and cutting surfaces.
- Never leave tool running unattended. Turn the power off and do not leave tool until it comes to a complete stop.
- Do not overreach. Keep proper footing and balance.
- Never stand on tool. Serious injury could occur if tool is tipped or if blade is unintentionally contacted.
- Know your tool. Learn the tool's operation, application and specific limitations.

- Use recommended accessories (refer to page 17). Use of improper accessories may cause risk of injury to persons.
- Handle workpiece correctly. Protect hands from possible injury.
- Turn machine off if it jams. Knife or bit jams when it digs too deeply into workpiece. (Motor force keeps it stuck in the work.)
- Always keep drive, cutterhead and knife guards in place and in proper operating condition.
- Feed work into knife or cutter against direction of rotation.

CAUTION: Think safety! Safety is a combination of operator common sense and alertness at all times when tool is being used.

WARNING: Do not attempt to operate tool until it is completely assembled according to the instructions.

ASSEMBLY

Refer to Figures 15 and 16, pages 16 and 18.

The planer/molder is shipped assembled except for the handwheel and handle (Figure 16, Key Nos. 22 and 24).

INSTALL HANDWHEEL AND HANDLE

Refer to Figure 16, page 18.

- Handwheel (Key No. 22) must be installed to the left side of the planer/molder.
- Align handle (Key No. 24) with the hole on the rim of the handwheel.
- Insert handle screw (Key No. 23) into handle and tighten to secure.
- Slide handwheel onto crank elevation screw (Key No. 19) so that the spring pin (Key No. 21) on the crank elevation screw is positioned between the groove in the handwheel.

REMOVE CAPS

Refer to Figure 15, page 16.

The planer/molder is shipped with caps (Key No. 13) on the threaded shafts (Key No. 11) to avoid damage to shafts during shipping and handling.

- Unscrew and remove caps before turning the tool on.
- Save caps for future use.

MOUNT PLANER TO WORK SURFACE

Refer to Figure 1.

- Planer is designed to be portable so it can be moved to job site, but should be mounted to stable, level bench or table. See Recommended Accessories, page 17.

MOUNTING INSTRUCTIONS FOR OPTIONAL STAND MODEL 22250

Refer to Figure 1.

Material List

- ½ x 15 x 22" particle board (not supplied)
- Four ¼-20 x 1¼" Bolts with washers and nuts (not supplied) for mounting board to Multi-Purpose Stand.
- Four 8-1.25 x 30mm bolts with washers (supplied with planer/molder) for mounting planer/molder to board.

A mounting board is needed when mounting planer/molder to Sears Multi-Purpose Stand Model 22250. The mounting board is made from ½" thick plywood or particle board.

- Cut and drill the board using drawing. The 10" diameter hole in the center is used for ventilation only.
- Secure the mounting board to the stand top first, using four ¼" bolts, washers and nuts (not provided). be sure board is centered on stand top and bolted securely.
- Mount the planer/molder to the mounting board using the four 8-1.25 x 30mm bolts with washers. Thread the bolts through the mounting board and into the base casting from underneath the board.

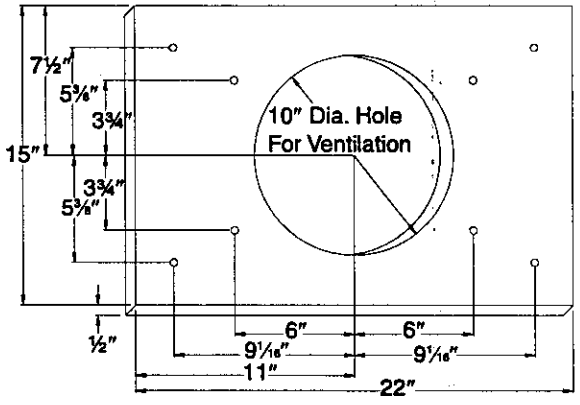


Figure 1 - Mount Planer/Molder to Optional Multi-Purpose Stand Model No. 22250

INSTALLATION

POWER SOURCE

WARNING: Do not connect planer/molder to the power source until all assembly steps have been completed.

The motor is designed for operation on the voltage and frequency specified. Normal loads will be handled safely on voltages not more than 10% above or below specified voltage. Running the unit on voltages which are not within range may cause overheating and motor burnout. Heavy loads require that voltage at motor terminals be no less than the voltage specified on nameplate.

- Power supply to the motor is controlled by a rocker switch. Removing the rocker switch will lock the unit and prevent unauthorized use.

GROUNDING INSTRUCTIONS

WARNING: Improper connection of equipment grounding conductor can result in the risk of electrical shock. Equipment should be grounded while in use to protect operator from electrical shock.

- Check with a qualified electrician if grounding instructions are not understood or if in doubt as to whether the tool is properly grounded.
- This tool is equipped with an approved cord rated at 150V and a 3-prong grounding type plug (see Figure 2) for your protection against shock hazards.
- Grounding plug should be plugged directly into a properly installed and grounded 3-prong grounding-type receptacle, as shown (see Figure 2).

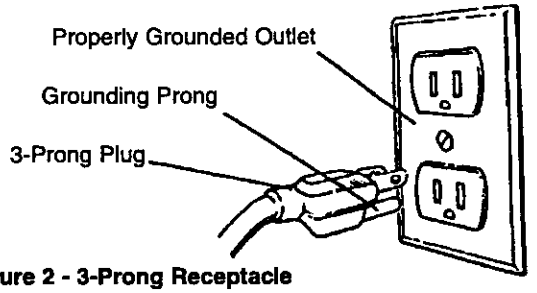


Figure 2 - 3-Prong Receptacle

- Do not remove or alter grounding prong in any manner. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electrical shock.

WARNING: Do not permit fingers to touch the terminals of plug when installing or removing from outlet.

- Plug must be plugged into matching outlet that is properly installed and grounded in accordance with all local codes and ordinances. Do not modify plug provided. If it will not fit in outlet, have proper outlet installed by a qualified electrician.
- Inspect tool cords periodically, and if damaged, have repaired by an authorized service facility.
- Green (or green and yellow) conductor in cord is the grounding wire. If repair or replacement of the electric cord or plug is necessary, do not connect the green (or green and yellow) wire to a live terminal.
- Where a 2-prong wall receptacle is encountered, it must be replaced with a properly grounded 3-prong receptacle installed in accordance with National Electric Code and local codes and ordinances.

WARNING: This work should be performed by a qualified electrician.

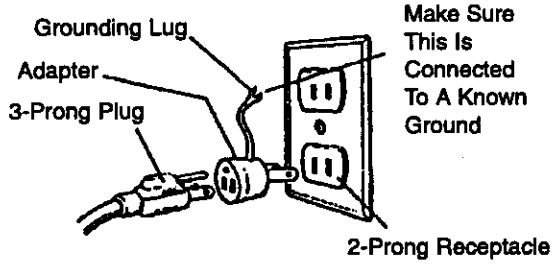


Figure 3 - 2-Prong Receptacle with Adapter

A temporary 3-prong to 2-prong grounding adapter (see Figure 3) is available for connecting plugs to a two pole outlet if it is properly grounded.

- Do not use a 3-prong to 2-prong grounding adapter unless permitted by local and national codes and ordinances. (A 3-prong to 2-prong grounding adapter is not permitted in Canada.)

Where a 3-prong to 2-prong grounding adapter is permitted, the rigid green tab or terminal on the side of the adapter must be securely connected to a permanent electrical ground such as a properly grounded water pipe, a properly grounded outlet box or a properly grounded wire system.

- Many cover plate screws, water pipes and outlet boxes are not properly grounded. To ensure proper ground, grounding means must be tested by a qualified electrician.

EXTENSION CORDS

- The use of any extension cord will cause some drop in voltage and loss of power.
- Wires of the extension cord must be of sufficient size to carry the current and maintain adequate voltage.
- The minimum extension cord wire size is A.W.G.14. Do not use extension cords over 25 ft. long.
- Use only 3-wire extension cords having 3-prong grounding type plugs and 3-pole receptacles which accept the tool plug.
- If the extension cord is worn, cut or damaged in any way, replace it immediately.

MOTOR

The 12½" planer/molder is supplied with a a 2½ HP motor and wiring installed.

The 120 Volt AC universal motor has the following specifications:

Horsepower (Maximum Developed)	2½
Voltage	120
Amperes	15
Hertz	60
Phase	Single
RPM	4500

ELECTRICAL CONNECTIONS

WARNING: Make sure unit is off and disconnected from power source before inspecting any wiring.

The motor is installed and wiring connected as illustrated in the wiring schematic (see Figure 4).

The motor is assembled with an approved three conductor cord to be used on 120 volts as indicated. The power supply to the motor is controlled by a double pole locking rocker switch.

The power lines are inserted directly onto the switch. The green ground line must remain securely fastened to the frame to properly protect against electrical shock.

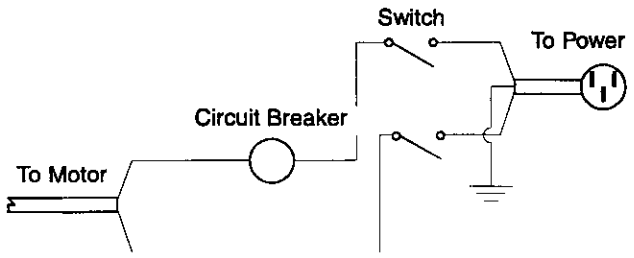


Figure 4 - Wiring Schematic

- Removing the rocker switch will lock the unit and prevent unauthorized use.

A manual reset overload protector is installed in line with the power supply to the motor. If the planer/molder is overloaded, the protector will break the circuit.

If the breaker is tripped, turn the planer/molder "off" and reset the circuit by pressing the button.

OPERATION

Refer to Figures 5 - 16.

DESCRIPTION

Sears 12½" planer/molder finishes rough-cut lumber to size and planes soft and hardwoods up to 5" thick and 12½" wide. Produces decorative designs including furniture moldings, baseboards, casings, picture frames, tongue and groove, glue joints, rabetting and much more. Wood feeds into three-blade cutterhead by adjustable rubber in-feed/out-feed rollers. Large 12½" x 19" cast iron table has precision ground steel columns for smooth feeding of the workpiece and reducing vibration. Motor has overload protection and is enclosed in the base of the machine, away from wood chips and dust. The gearbox offers two speeds; 26 ft/min. for fast planing, and 13 ft/min for smooth finish molding. The tool comes with anti-kickback mechanism for added safety, and built-in carrying handles.

OPERATION SAFETY RULES

WARNING: Operation of any power tool can result in foreign objects being thrown into eyes which can result in severe eye damage. Always wear safety goggles complying with United States ANSI Z87.1 (shown on package) before commencing power tool operation.

CAUTION: Always observe the following safety precautions:

- Know general power tool safety. Make sure all precautions are understood (see pages 2, 3 and 5).
- Whenever adjusting or replacing any parts on planer/molder, turn switch off and remove plug from power source.
- Make sure all guards are properly attached and securely fastened.
- Make sure all moving parts are free from interference.
- Always wear eye protection or face shield.
- Make sure knives are aligned and properly attached to cutterhead.
- Do not plug in planer/molder unless switch is in "off" position. After turning switch on, allow planer/molder to come to full speed before operating.
- Do not attempt to perform an abnormal or little used operation without study and the use of adequate jigs, fixtures and the like.
- Keep hands clear of all moving parts.
- Do not force cut. Slowing or stalling will overheat motor. Allow automatic feed to function properly.
- Use quality lumber. Blades last longer and cuts are smoother with good quality wood.
- Do not plane material shorter than 14½", narrower than ¾", wider than 12½" or thinner than ½".
- Never make planing cut deeper than 3/32".
- Maintain the proper relationships of infeed and outfeed table surfaces and cutterhead knife path.
- Do not back the work toward the infeed table.
- Take precautions against kickback. Do not permit anyone to stand or cross in line of cutterhead's rotation. Kickback or thrown debris will travel in this direction.
- Turn switch off and disconnect power whenever planer/molder is not in use.
- Replace or sharpen knives as they become damaged or dull.
- Keep planer/molder maintained. Follow maintenance instructions (see page 12).

DEPTH OF CUT

- Thickness planing refers to the sizing of lumber to a desired thickness while creating a level surface parallel to the opposite side of the board.
- Quality of thickness planing depends on the operator's judgement about the depth of cut. Depth of cut depends on the width, hardness, dampness, grain direction and grain structure of the wood.
- Maximum thickness of wood which can be removed in one pass is 3/32" for planing operations. For optimum planing performance, the depth of cut should be less than 1/16".
- Board should be planed with shallow cuts until the work has a level side. Once level surface has been created, flip the lumber and create parallel sides. Plane alternate sides until the desired thickness is obtained.
- When half of total depth of cut is taken from each side, the board will have a uniform moisture content and additional drying will not cause it to warp.
- Depth of cut should be shallower when work is wider.
- When planing hardwood, take light cuts or plane the wood in thin widths.
- Make test cut when working with a new type of board or different kind of operation.
- Check accuracy of test cut prior to working on finished product.

WOOD GRAIN

For an improved surface finish with minimal tearout, always plane or mold the workpiece with the grain. The workpiece should be fed into the planer/molder so that the knives or bits are traveling with the grain as the cutters finish the cut. The grain should be angled up toward the rear of the workpiece as it is fed into the planer/molder.

PLANING

WARNING: Always turn the planer/molder off and disconnect it from the power source whenever knife cover is removed. Never operate planer/molder without the knife cover properly secured.

The planer/molder is supplied with planing blades mounted in the cutterhead and the infeed and outfeed rollers adjusted to the correct height. The planer/molder is capable of working at two different feed rates. Feed rate refers to rate at which lumber travels through planer/molder. Planing can be done at 13 FPM for an improved surface finish or 26 FPM for faster planing (see Feed Rate Adjustment).

- Adjust the table height to produce the depth of cut desired.
- Stand to side which the handwheel was attached.
- Lift edge to infeed side of the table by grasping edges of board at approximately middle of length.
- Boards longer than 24" should have additional support from free standing material stands.
- Position the workpiece with the face to be planed on top.
- Gently slide the workpiece into the infeed side of the planer/molder until the infeed roller begins to advance the workpiece.
- Let go of the workpiece and allow automatic feed to advance the workpiece.
- Do not push/pull on workpiece.
- Move to the rear and receive planed lumber by grasping it in same manner as it was fed.

CAUTION: Do not stand directly in line with front or rear of planer/molder.

- Do not grasp any portion of board which has not gone past out-feed roller.
- Repeat this operation on all boards which need to be same thickness.

AVOIDING SNIPE

Surface that the planer/molder will produce will be smoother if shallower depth of cut is used. Snipe refers to a depression at either end of board caused by an uneven force on cutterhead when work is entering or leaving planer. Snipe will occur when boards are not supported properly or when only one feed roller is in contact with work at beginning or end of cut. To avoid snipe:

- Gently push the board up while feeding the work until the outfeed roller starts advancing it.
- Move to the rear and receive planed board by gently pushing it up when the infeed roller looses contact with the board.
- When planing more than one board of the same thickness, butt boards together to avoid snipe.

KNIFE HEIGHT ADJUSTMENT

Refer to Figures 6 and 15, pages 7 and 16.

WARNING: Disconnect planer/molder from the power source and turn the planer/molder OFF before attempting to adjust or replace the cutting bits or knives, or performing any adjustment or maintenance to the planer/molder.

A knife height gauge is provided for use when replacing or adjusting the planing knives (Key No. 40).

- Unplug the planer/molder and turn it OFF.
- Remove the knife cover (Key No. 4)
- Loosen all the set screws (Key No. 42) on all of the gibs (Key Nos. 41 and 43) in all 3 cutterhead slots.
- Using the brass punch, tap all the gibs down into the cutterhead slot.
- Make sure the gibs are loose and can be moved.
- Remove the old knives, all gibs and spacers (Key No. 44).
- Make sure the cutterhead slots and gibs are clean.
- Install the new planer knives and replace gibs and spacers.
- Tighten the gib set screws only enough to hold the gibs and knives in position.
- Make sure there is no gap between the gibs, and the spacers are in place.
- Place the knife height gauge on one end of the knife and adjust the jack screw until the knife just contacts the tab in the middle of the gauge (see Figure 6).
- Adjust both ends of all three knives in a similar manner until all of the knives are at the same height.
- Tighten the gibs slowly, moving from one cutterhead slot to the next, until all three knives and all gibs are tight and secure.

NOTE: The knives may creep up as the gibs are tightened. Lightly tap on knives with a piece of hardwood to position knives against jack screws if needed.

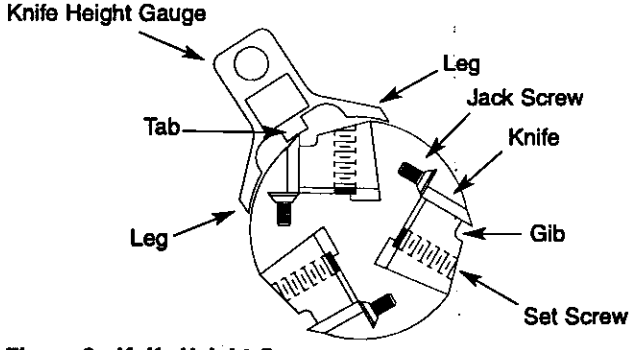


Figure 6 - Knife Height Gauge

POSITION THE CHIPBREAKER

Refer to Figure 15, page 16.

The chipbreaker (Key No. 2) is used to help remove wood chips from the cutter bits and knives while planing or molding. Adjust the chipbreaker every time the cutting tools are changed or adjusted.

The chipbreaker should be positioned as close to the cutterhead as possible without contacting the cutter bits or knives. Loosen the three hex head bolts (Key No. 3) that hold the chip breaker and position it as close to the cutterhead as possible, rotate the cutterhead by hand to ensure that there is no interference with the chipbreaker. Secure the chip breaker by tightening the three hex head bolts. Replace and secure knife cover.

MOLDING

Molding, also known as millwork or trim, can be defined as a strip of wood milled with a plain or decorative surface which is continuous throughout its length.

- To get superior molding finish, workpiece must be planed and presized prior to molding. Always presize the workpiece to 1/16" of the final thickness prior to molding.

Certain molding profiles require outer edge clean-up. When using such profiles the workpiece must be presized to 1/8" larger than the final width. This will allow 1/16" for clean-up on either side.

Certain molding profiles cut only the edge of the workpiece. When using such profiles workpiece must be presized to the same width as the final width.

INSTALLING CUTTER BITS

Refer to Figures 7, 8 and 15, pages 8, 9 and 16.

NOTE: The cutter bits are mounted in the center of the cutter head (Figure 15, Key No. 39) using the 2" bit gibs (Figure 15, Key No. 43) provided. The cutter bits and the planing blades (Figure 15, Key No. 40) are mounted in the cutterhead at the same time so that planing and molding operations can be done with the same set-up.

The knife setting gauge (see Figure 7) is used when mounting three piece molding bits in the planer/molder cutterhead. The gauge aligns the bits in the cutterhead so that all three bits cut the workpiece in the same position providing precise cuts and improved surface finish.

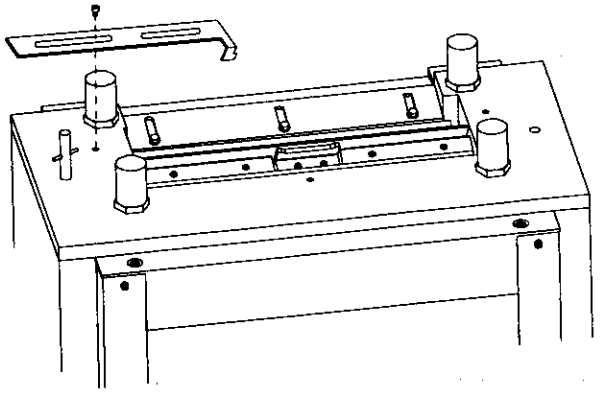


Figure 7 - Installing Cutter Bits and Knife Setting Gauge

- Turn the planer/molder off and unplug the planer/molder from the power source.
- Remove the knife cover and chip deflector (Figure 15, Key Nos. 4 and 6).
- Using the 6mm socket head bolt (Figure 15, Key No. 5) used to mount the knife cover, mount the knife setting gauge to the top of the planer/molder as shown in Figure 7.
- Position the knife setting gauge so that the molding bits are positioned in cutterhead as required. Tighten the 6mm socket head bolt.
- Loosen two set screws (Figure 15, Key No. 42) on the 2" bit gib (Figure 15, Key No. 43) located in the center of the cutterhead.
- Use the brass punch in the hardware bag to gently tap the gib down into the cutterhead slot.
- Tap until the gib is loose and can be moved.
- Remove the 1" spacers (Figure 15, Key No. 44) as needed.
- Be sure the cutterhead slot and gibs are clean and free of any dirt, grease, chips or burrs.
- Place the cutter bits in the cutterhead slot in place of the spacers.
- Insert the first cutter bit to be mounted between the bit gib and planer knife.
- Slide the cutter bit against edge of the cutter bit setting gauge and tighten the cutter bit/bit gib combination in the cutterhead.
- To mount more than one cutter bit in each cutterhead slot, for example, tongue and groove cutter bits (23302), additional set of three bit gibs is required. Use replacement parts list, page 17, Key No. 43 to order.
- Remove one or both cutterhead gibs (Figure 15, Key No. 41) as needed after loosening the set screws (Figure 15, Key No. 42) and tapping gibs down.
- Place the bit gib in the cutterhead slot at the desired position.
- Insert the cutter bit between the bit gib and planer knife, and tighten cutter bit/bit gib combination.
- Rotate the cutterhead and mount the remaining cutter bits using the knife setting gauge to align bits.
- Be sure all bits and gibs are tight and secure.
- Remove the knife setting gauge and replace the knife cover and chip deflector.

WARNING: Never operate planer/molder without knife cover and chip deflector properly mounted.

CAUTION: In order to prevent damage to cutterhead, caution must be exercised when mounting gibs in the cutterhead slots.

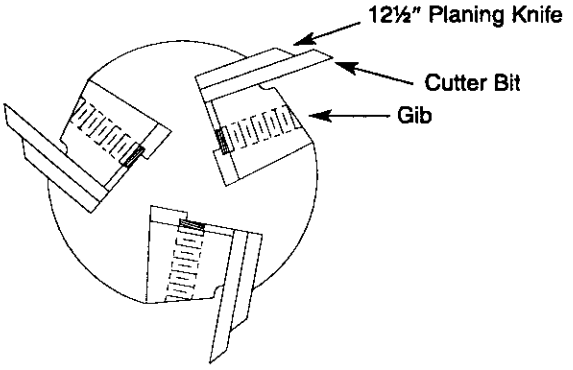


Figure 8 - Cutterhead with Cutting Bits

- Always tighten the gibs gradually and tighten the three gibs in the cutterhead slot at the same time.
- Mount the gib in one cutterhead slot and tighten the set screws only enough to hold the gib in position, then mount the other two gibs in the same manner.
- Tighten the set screws on one gib slightly, then tighten the other two gibs with equal pressure on the set screws.
- Continue to tighten the three gibs with small amounts of added pressure, moving from one gib to the next, until all three gibs are tight and secure.
- Repeat the same procedure for mounting the gibs in the other two cutterhead slots.
- Operate the planer/molder for five minutes and retighten all set screws.
- Make sure to recheck the set screws after every two hours of use.

INSTALLING THE PATTERN KNIVES

Refer to Figures 9 and 15, pages 9 and 16..

The steel pattern knives, Sears Model Numbers 23331 through 23341, are ¼" thick, and are supplied with gibs. Use only gibs supplied with pattern knives for mounting on the cutterhead.

To install pattern knives, all gibs (Figure 15, Key Nos. 41 and 43), planing knives (Figure 15, Key No. 40), spacers (Figures 15, Key No. 44) and cutter bits, must be removed.

- Loosen all eight set screws (Figure 15, Key No. 42) in one cutterhead slot.
- Use the brass punch to tap all the gibs down into the cutterhead slot.
- Remove all gibs, spacers and cutter bits.
- Repeat the same procedure with the other cutterhead slots.
- Be sure all slots are clean and free of any dirt, grease, chips or burrs.
- Position the first pattern knife to be mounted in the cutterhead slot with the proper gib.
- Slide the pattern knife against edge of the knife setting gauge and tighten the knife/gib combination in the cutterhead.
- Loosen three washer head bolts (Figure 15, Key No. 3) and position chipbreaker (Figure 15, Key No. 2) (see "Position The Chipbreaker", page 7).
- Rotate the cutterhead by hand and mount the two remaining pattern knives.
- Use the knife setting gauge to align knives.
- Be sure all knives and gibs are aligned, tight and secure.

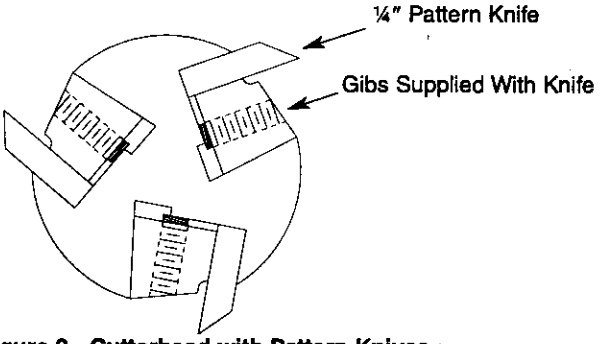


Figure 9 - Cutterhead with Pattern Knives

The planer/molder cutterhead will accept multiple pattern knife set-ups at one time. For example, a pattern knife and its relief knives can be mounted at the same time so that the relief and the molding can be done with one gib set-up. To mount pattern knife, the gib supplied with the pattern knife must be used. To mount back relief knife, the bit gib and 1" spacers (Figure 15, Key Nos. 43 and 44) must be used.

- Install the first pattern knife in the cutterhead slot with the proper gib and tighten the knife/gib combination. Rotate cutterhead. Use knife setting gauge and install the two remaining pattern knives, one in each cutterhead slot.
- Install the first back relief knife in the cutterhead slot with the bit gib and 1" spacers. Tighten the knife/bit gib combination. Rotate cutterhead. Use knife setting gauge and install the two remaining back relief knives, one in each cutterhead slot.
- The feed rollers must be lowered after the back relief cut for molding operation. See "Feed Roller Adjustment" below.
- Make sure all knives and gibs are aligned, tight and secure.
- Turn the cutterhead by hand and make sure there is no interference with the knife path.

To install more than one pattern knife in each cutterhead slot, for example, crown and bed knives or tongue and groove knives, an additional set of three gibs is required.

Make sure the chipbreaker position is appropriate with all the pattern knives. Be sure to replace the knife cover (Figure 15, Key No. 4) properly after removing the knife gauge. Replace the chip deflector (Figure 15, Key No. 6).

FEED ROLLER ADJUSTMENT

Refer to Figures 10, 15, and 16, pages 10, 16 and 18.

The planer/molder feed rollers can be raised or lowered as needed. The infeed and outfeed rollers are set 5/16" below the cutterhead (not the knives) at the factory for planing operation. The infeed and outfeed rollers have to be set 5/16" below the cutterhead for molding operation using the pattern knives. Feed rollers must be adjusted properly for smooth feeding of the workpiece.

NOTE: Never lower infeed and outfeed rollers beyond 5/16" lower than the cutterhead. This will cause severe stress on the gearbox and roller system.

To adjust feed roller height for molding:

- Make two 3 x 1½ x 3½" blocks and mark them as cutterhead blocks.
- Make two 2 11/16 x 1½ x 3½" blocks and mark them as molding blocks.
- Make sure the blocks are made to the mentioned size.
- Turn handwheel (Figure 16, Key No. 22) and lower the table (Figure 16, Key No. 20) to allow cutterhead blocks to slide freely between the table and the cutterhead. Cutterhead may have to be turned by hand to rotate knife out of the way.
- Place the 3" portion of cutterhead blocks beneath the cutterhead, one on each side. Adjust table height so the cutterhead block just makes contact with the cutterhead.
- Do not raise or lower the table from now on until all other adjustments are made.
- Place the 2 11/16" portion of molding blocks beneath the infeed roller, one on each side.
- Loosen the large hex nuts (See Figure 10 and Figure 15, Key No. 10) on both sides of the infeed roller using the wrench provided.

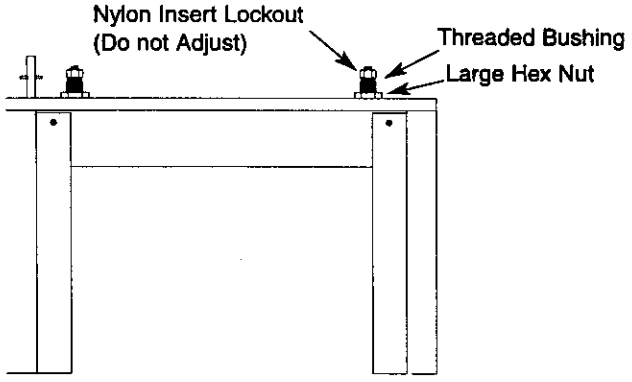


Figure 10 - Adjusting Feed Roller Height

- Using the same wrench, turn threaded bushing (Figure 15, Key No. 9) clockwise until the infeed roller just makes contact with the block.
- Tighten large hex nut and repeat this process with the other side of the infeed roller.
- Move molding blocks beneath the outfeed roller and repeat the process.
- Make sure that the large hex nuts are tightened after adjustment.
- Remove the cutterhead blocks and molding blocks and retain them for future use.

The feed rollers should be raised to their original position when the molding operation is done and at all times when planing.

To raise rollers to original position:

- Make two 2 13/16" x 1½" x 3½" blocks and mark them as planing blocks.
- Adjust the feed rollers height in the same manner as for the molding using 2 13/16" portion of the blocks.
- Retain the blocks after adjustment for future use.

AUXILIARY TABLE

Some of the cutting bits and pattern knives are designed to cut all of the way through the workpiece and 1/16" beyond the workpiece.

This produces a smooth edge and final sizing of the workpiece. When using these bits or knives, an auxiliary wood table must be mounted on the cast iron table to prevent damage to the table and the bits or knives.

The auxiliary table should be made from smooth ¾" particle board (12⅜" wide and 31¼" long) to provide a smooth surface for the workpiece to slide on.

NOTE: Auxiliary table is 12" longer than the cast iron table to allow 6" overhang in the front and rear for long workpieces.

The particle board must be mounted on the cast iron table with four 5/16 x 1" flat head screws, washers and nuts (not included). Be sure to countersink the mounting holes on the auxiliary table for the flat head screws. The screws must be positioned below the surface of the auxiliary table to prevent damage to the workpiece.

GUIDE FENCES

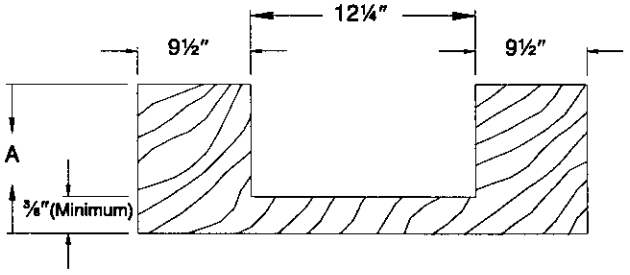
When molding, the workpiece must be guided into the molding cutter bits or knives properly in order to produce the desired shape and size molding. Using properly adjusted guide fences assures the workpiece passes the molding cutters/knives in the same position using multiple passes.

Guide fences should be made from smooth, straight hardwood. Guide fences should be the same length as auxiliary table (31¼") and 2" wide. Cut the guide fences ¼" lower than the maximum thickness of the final workpiece profile. The guide fences must be notched to clear the infeed/outfeed rollers and anti-kickback pawls. See Figure 11 on page 11 for dimension.

To mount guide fences to table/auxiliary table:

- Install molding cutter bits/knives in the cutter head. See "Installing Cutter Bits" and "Installing the Pattern Knives".
- Lower the table and carefully turn cutterhead by hand so that one cutter bit/knife is at the lowest point of the cutting edge.
- Position the workpiece beneath the cutter bit/knife.

- Slide in first guide fence and position inside edge of guide rail to outside edge of workpiece.
- Clamp the guide fence to table/auxiliary table using "C" clamps on both ends.
- Position second guide fence on the other side of the workpiece and clamp it to table/auxiliary table.
- Make sure workpiece slides between guide fences smoothly and without binding.



"A" will change depending upon thickness of finished workpiece.

Figure 11 - Guide Fence (Side View)

RELIEF KNIVES

Many of the ¼" pattern knives are supplied with relief knives. The relief knives are used to cut a relief on the back side of the molding so that the molding will better fit irregular surfaces such as plastered walls.

Always cut the relief first before molding the workpiece, so that there is a flat surface for the workpiece to slide on during the molding operation. If the molding is done first, the workpiece will not lie flat on the feed table and therefore the relief cannot be cut.

SETTING UP FOR MOLDING

- Mount auxiliary table onto cast iron table.
- Install the required molding cutter bits/knives in the cutterhead.
- Lower the table and insert the workpiece relative to the position of cutter bits/knives.
- Install the guide fences relative to the position of the workpiece.
- Raise the table until the workpiece just contacts the infeed roller.
- Record the height of the table as indicated on the scale.
- Lower the table and remove workpiece.
- Raise the table back to the recorded measurement. Continue to raise the table one full turn of the handwheel. Record the measurement — this is the first pass measurement.
- Switch on the planer/molder and insert the workpiece until the feed roller begins to advance the workpiece.

  NOTE: When using certain cutter bits/knives, the workpiece may feed in a jerky motion. If this happens, turn the handwheel and raise the table until the workpiece advances smoothly. Revise the first pass measurement with the current reading.

- If your molding requires several passes, make sure you run all your stock before changing the set-up for each pass. This will assure conformity of shape between workpieces.

FACE MOLDING

Refer to Figure 12 below.

NOTE: Always cut the relief first before molding the workpiece.

- Mount the required cutter bits or pattern knives in the planer/molder cutterhead. (See "Installing Cutter Bits or Mounting Pattern Knives", pages 8 and 9.)
- Position the guide fences on each side of the bits or knife in the desired position. (See "Guide Fences", page 10.)

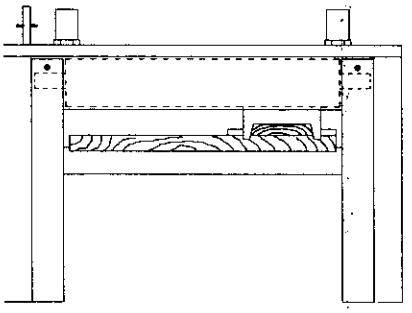


Figure 12 - Face Molding

EDGE MOLDING

Refer to Figure 13 below.

The workpiece edges can be molded by feeding the workpiece on edge into the planer/molder.

Guide fences that are ¾" shorter than the workpiece must be positioned on the sides of the workpiece. Be sure the workpiece is supported rigidly on both sides by the guide fences directly under the cutter bits or knives.

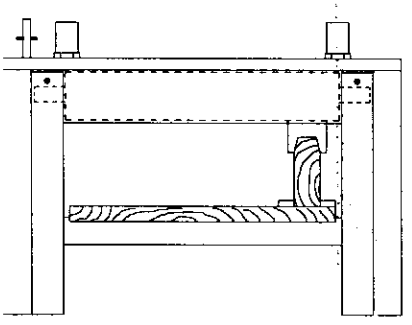


Figure 13 - Edge Molding

ANTI-KICKBACK PAWLS

The planer/molder is supplied with anti-kickback pawls that help prevent the cutterhead from kicking back the workpiece.

CAUTION: Never stand in front of infeed or outfeed side of planer/molder. Always stand to one side of planer/molder to avoid injury if a kickback of the workpiece should occur.

DUST COLLECTOR CHIP CHUTE

Refer to Figure 15, page 16.

A dust collector chip chute (not shown) is available as an optional accessory.

The dust collector chip chute is mounted to the planer/molder in place of the chip deflector. To mount dust collector chip chute:

- Switch off and unplug the planer/molder.
- Unscrew and remove three socket head bolts and washers (Key Nos. 7 and 8).
- Remove chip deflector (Key No. 6).
- Slide dust collector chip chute along the edges of knife cover (Key No. 4) so that the slots on the knife cover are aligned above the holes on the dust collector chute and the slots on the dust collector chute align with the holes on the rear side of roller case (Key No. 1).
- Reuse three socket head bolts and washers (Key Nos. 7 and 8) to fasten dust chute with knife cover.
- Use three 6-1.0 x 8mm socket head bolts and three 6mm flat washers (supplied with dust chute) to fasten dust chute with roller case.

The dust chute has a fitting for attaching a vacuum hose. Attach a 2½" O.D. wet/dry vacuum hose to the fitting. Be sure to turn the vacuum on before operating the planer/molder.

OVERLOAD RESET

The planer/molder is supplied with an overload protection circuit breaker to prevent damage to the planer/molder motor.

If the planer/molder stops working during a planing or molding operation, unplug the planer/molder and turn the switch OFF. Press the reset button next to the switch to enable the planer/molder to be restarted.

LIFTING BARS

Refer to Figure 16, page 18.

Four lifting bars (Key No. 25) are provided to make relocation of the planer/molder easy.

Slide the four handles out of the infeed and outfeed ends of the table and use them to carry the planer/molder to the desired location.

CAUTION: The planer/molder is top-heavy and will tend to tip when moved. Exercise caution whenever moving the planer/molder.

MAINTENANCE

Refer to Figure 16, page 18.

WARNING: Be sure planer/molder is unplugged from any power source and turned off before attempting any maintenance.

- Keep planer/molder clean of any wood chips, dust, dirt or debris.
- Clean the four steel columns (Key No. 32) to prevent the table from binding when raised and lowered.
- Keep elevating lead screws (Key Nos. 18 and 19) clean and properly lubricated with grease.
- Keep the anti-kickback pawls clean and operating smoothly to prevent injury due to kickback.
- After each ten hours of operation, clean the chain/gear drive mechanism.
- Using a clean, dry cloth, clean all of the chains and gears of wood chips, dust, and old grease.
- Use common automotive bearing grease to lubricate all chains and gears. Be sure all chains and gears have plenty of grease.

LUBRICATION

The table surface can be coated with a lubricant, such as furniture wax, to make the workpiece feed smoother. Be sure that the lubricant used does not affect the ability to finish the workpiece with varnish, sealer, etc.

For example, do not use any silicone base lubricants because they will ruin any attempt to finish the wood.

Replace feed rollers if damaged. Replace blades, cutter bits and pattern knives if worn or damaged.

TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Excessive snipe (gouging at ends of board)	1. Dull knives	1. Replace knives per instructions, see "Operation"
	2. Inadequate support of long boards	2. Support long boards
	3. Uneven feed roller pressure	3. Check feed roller operation
	4. Table not aligned	4. Check position on elevation screws
	5. Lumber not butted properly	5. Butt end to end each piece of stock as boards pass through planer/molder
	6. Support rollers misaligned	6. Adjust support rollers
Fuzzy grain	Planing wood with a high moisture content	Remove high moisture content from wood by drying
Torn grain	1. Too heavy a cut	1. Review "Depth of Cut"
	2. Knives cutting against grain	2. Review "Wood Grain"
	3. Dull knives	3. Replace knives per instructions, see "Knife Height Adjustment"
Rough raised grain	1. Dull knives	1. Replace knives per instructions, see "Knife Height Adjustment"
	2. Too heavy a cut	2. Review "Depth of Cut"
	3. Moisture content too high	3. Dry the wood or use dried wood
Difficult to raise/lower table	Cutterhead not parallel with table	Adjust elevation screws, see "Adjusting Depth of Cut"
Uneven depth of cut (tapered cut)	Cutterhead not parallel with table	Adjust elevation screws, see "Adjusting Depth of Cut"
Belt slipping	Loose belt	Tension or replace belt, see "V-Belt Adjustment"
Planer/Molder will not operate	1. No power to planer/molder	1. Check power source by qualified electrician
	2. Motor overload protection tripped	2. Reset motor overload protection, see "Overload Reset"
	3. Defective or loose switch or wiring	3. Check switch and wiring by qualified electrician
Board slips, will not feed	Feed rollers too high	Lower feed rollers, see "Feed Roller Adjustment"
Board feeds, but does not cut	Feed rollers too low	Raise feed rollers, see "Feed Roller Adjustment"
Board feeds inside, but stops moving past the outfeed roller	1. Outfeed rollers too high	1. Lower outfeed rollers in level with infeed rollers, see "Feed Roller Adjustment"
	2. Outfeed rollers cannot rotate due to clogging of chips	2. Clear the clogging, use dust collector chip chute, see "Recommended Accessories", page 17
Planing/molding knife cannot be removed	Gibs not loose	Loosen set screws on gibs and tap down all the gibs

MAINTENANCE

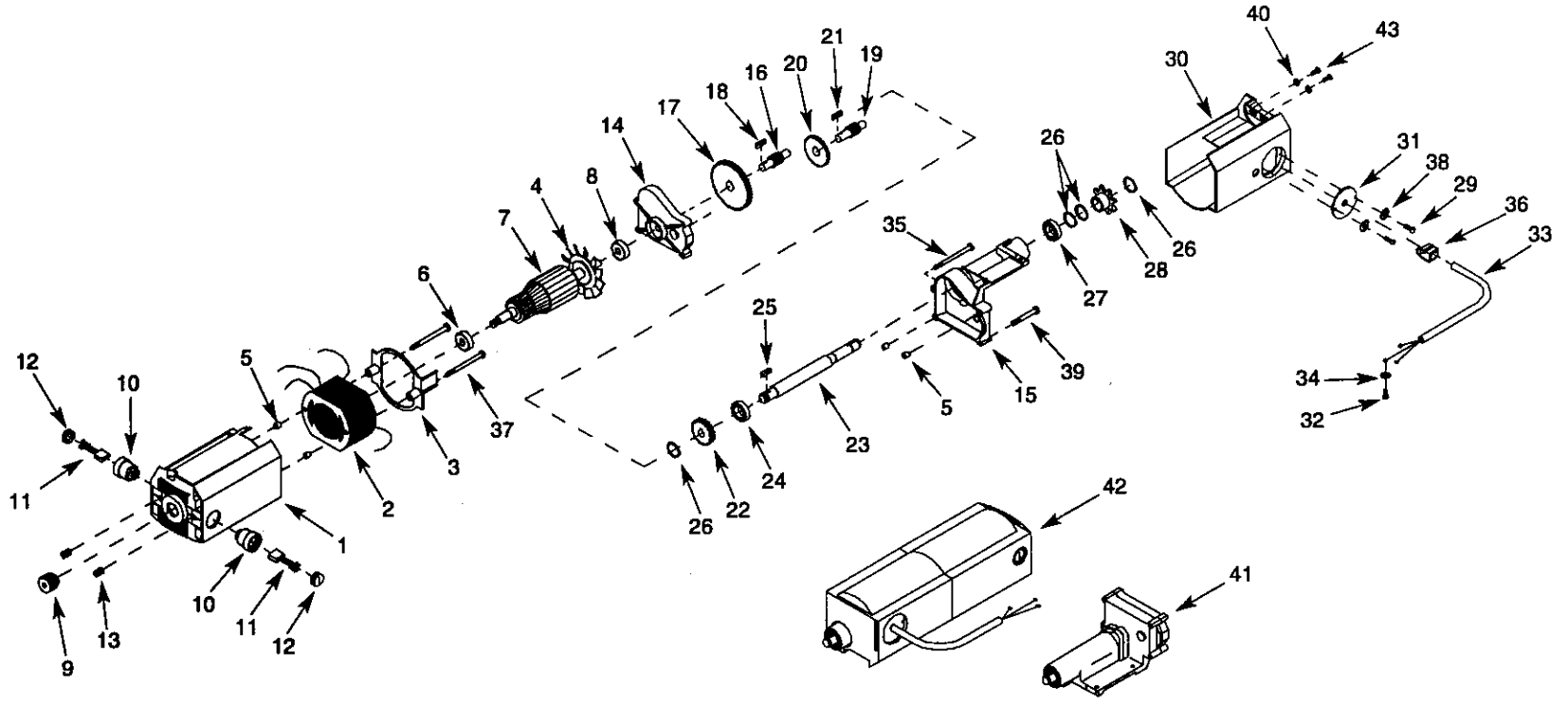


Figure 14 - Replacement Parts Illustration for Motor

REPLACEMENT PARTS LIST FOR MOTOR

KEY NO.	PART NO.	DESCRIPTION	QTY.
1	3857.00	Motor Housing	1
2	4283.00	Stator	1
3	4284.00	Fan Casing	1
4	3860.00	Fan	1
5	3861.00	Aligning Bushing	4
6	STD315215	6201 Bearing*	1
7	4285.00	Armature With Fan	1
8	STD815205	6200 Bearing*	1
9	3865.00	Motor Pulley	1
10	3866.00	Brush Holder	2
11	3867.00	Carbon Brush (Set of 2)	1
12	3868.00	Brush Cap	2
13	1838.00	5-0.8 x 10mm Set Screw	2
14	3869.00	Gearbox Bracket	1
15	3870.00	Gearbox	1
16	3874.00	Pinion Shaft	1
17	3875.00	Gear	1
18	3873.00	4 x 4 x 8mm Key	1
19	3871.00	Pinion Shaft	1
20	3872.00	Gear	1
21	3846.00	3 x 3 x 7mm Key	1
22	3876.00	Gear	1

KEY NO.	PART NO.	DESCRIPTION	QTY.
23	8575.00	Gear Shaft	1
24	STD315225	6202 Bearing*	1
25	1531.00	4 x 4 x 10mm Key	1
26	0533.00	3AMI-15 Retaining Ring	4
27	STD315525	6002 Bearing*	1
28	3853.00	Chain Sprocket	1
29	3885.00	4-1.5 x 16mm Pan Head Screw	2
30	4286.00	Gearbox Housing	1
31	8576.00	Cord Plate	1
32	1766.00	5-0.8 x 8mm Pan Head Screw	1
33	8580.00	Motor Cord	1
34	1474.00	5mm Serrated Washer	1
35	1643.00	5-1.6 x 60mm Pan Head Screw	1
36	2434.00	Strain Relief	1
37	4288.00	5-1.6 x 70mm Pan Head Screw	2
38	5156.00	4mm Serrated Washer	2
39	1544.00	5-1.6 x 50mm Pan Head Screw	3
40	3888.00	4mm Flat Washer	2
41	8578.00	Gearbox Assembly	1
42	8577.01	Motor Assembly	1
43	0781.00	4-0.7 x 8mm Pan Head Screw	2

* Standard hardware item available locally

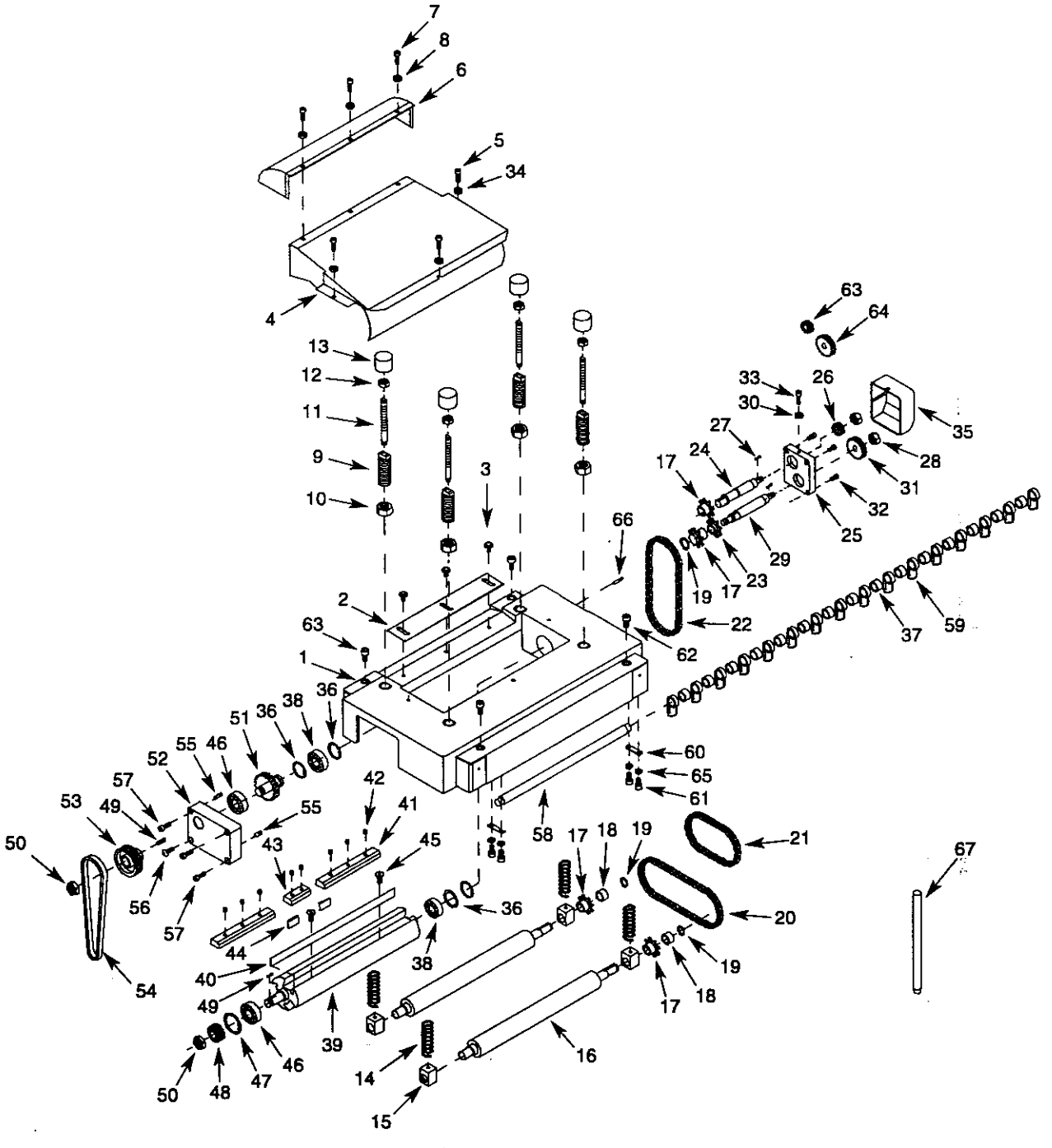


Figure 15 - Replacement Parts Illustration for Roller case

REPLACEMENT PARTS LIST FOR ROLLER CASE

KEY NO.	PART NO.	DESCRIPTION	QTY.
1	8508.00	Roller Case	1
2	8509.00	Chipbreaker	1
3	7317.00	6-1.0 x 12mm Washer Head Bolt	3
4	8510.00	Knife Cover	1
5	8662.00	6-1.0 x 8mm Socket Head Bolt	3
6	8512.00	Chip Deflector	1
7	6086.00	4-0.7 x 8mm Socket Head Bolt	3
8	STD851004	4mm Flat Washer*	3
9	8513.00	Threaded Bushing	4
10	8514.00	22-1.5mm Hex Nut	4
11	8515.00	Threaded Shaft	4
12	8516.00	10-1.5mm Nylon Insert Locknut	4
13	8517.00	Cap	4
14	3844.00	Spring	4
15	8519.00	Retaining Bracket	4
16	8520.00	Roller	2
17	3853.00	Chain Sprocket	4
18	3856.00	Spacer	2
19	0533.00	3AMI-15 Retaining Ring	3
20	8522.00	Roller Chain	1
21	8523.00	Gearbox Chain	1
22	8524.00	Motor Chain	1
23	8525.00	Chain Sprocket	1
24	8526.00	Gear Shaft	1
25	8527.00	Gearbox	1
26	8528.00	21T Molding Gear	1
27	3873.00	4 x 4 x 8mm Key	2
28	8529.00	8-1.25mm Nylon Insert Locknut	2
29	8530.00	Gear Shaft	1
30	STD851005	5mm Flat Washer*	1
31	8532.00	40T Molding Gear	2
32	1775.00	6-1.0 x 25mm Socket Head Bolt	2
33	6270.00	5-0.8 x 8mm Socket Head Bolt	1
34	STD851006	6mm Flat Washer*	3
35	8534.00	Gearbox Cover	1
36	1441.00	3BMI-34 Retaining Ring	3
37	8535.00	Spacer	35
38	STD315225	6202ZZ Bearing*	2
39	8536.00	Cutterhead	1
40	8537.00	Planer/ Knife (Set)	1
41	8538.00	Cutterhead Gib	6
42	8560.00	8-1.25 x 16mm Set Screw	18
43	8539.00	Bit Gib	3
44	8540.00	Spacer	6
45	8541.00	Jack Screw	6
46	STD315535	6203ZZ Bearing*	1
47	3838.00	3BMI-40 Retaining Ring	1
48	8542.00	Spur Gear	1
49	3839.00	5 x 5 x 10mm Key	2
50	3829.00	16-1.5mm Hex Nut	2
51	8544.00	Spur Gear Shaft Assembly	1
52	8545.00	Gearbox	1
53	3840.00	Drive Pulley	1
54	8547.00	Poly V-belt	1
55	8511.00	4 x 16mm Dowel Pin	2
56	8548.00	6-1.0 x 35mm Pan Head Screw	1
57	6182.00	6-1.0 x 30mm Socket Head Bolt	3
58	8549.00	Anti-Kickback Pawl Shaft	1
59	8550.01	Anti-Kickback Pawl	34
60	8551.00	Bracket	2
61	3855.00	5-0.8 x 10mm Socket Head Bolt	4
62	1822.00	8-1.25 x 20mm Socket Head Bolt	4
63	8552.00	30T Planing Gear	1
64	8553.00	31T Planing Gear	3
65	STD852005	5mm Lock Washer*	4
66	8664.00	8 x 45mm Spring Pin	1
67	9575.00	Brass Punch	1
Δ	8507.02	Owner's Manual	1
Δ	8581.00	Blade Height Gauge	1
Δ	8755.00	Cutter Bit Setting Gauge	1
Δ	8760.01	Wrench	1

* Standard hardware item available locally

Δ Not Shown

Recommended Accessories		
Δ	Dust Collector Chip Chute	8582.00
Δ	Multi-Purpose Stand	351.22250
Δ	Horizontal Roller Stand	351.21417

Model 351.233831

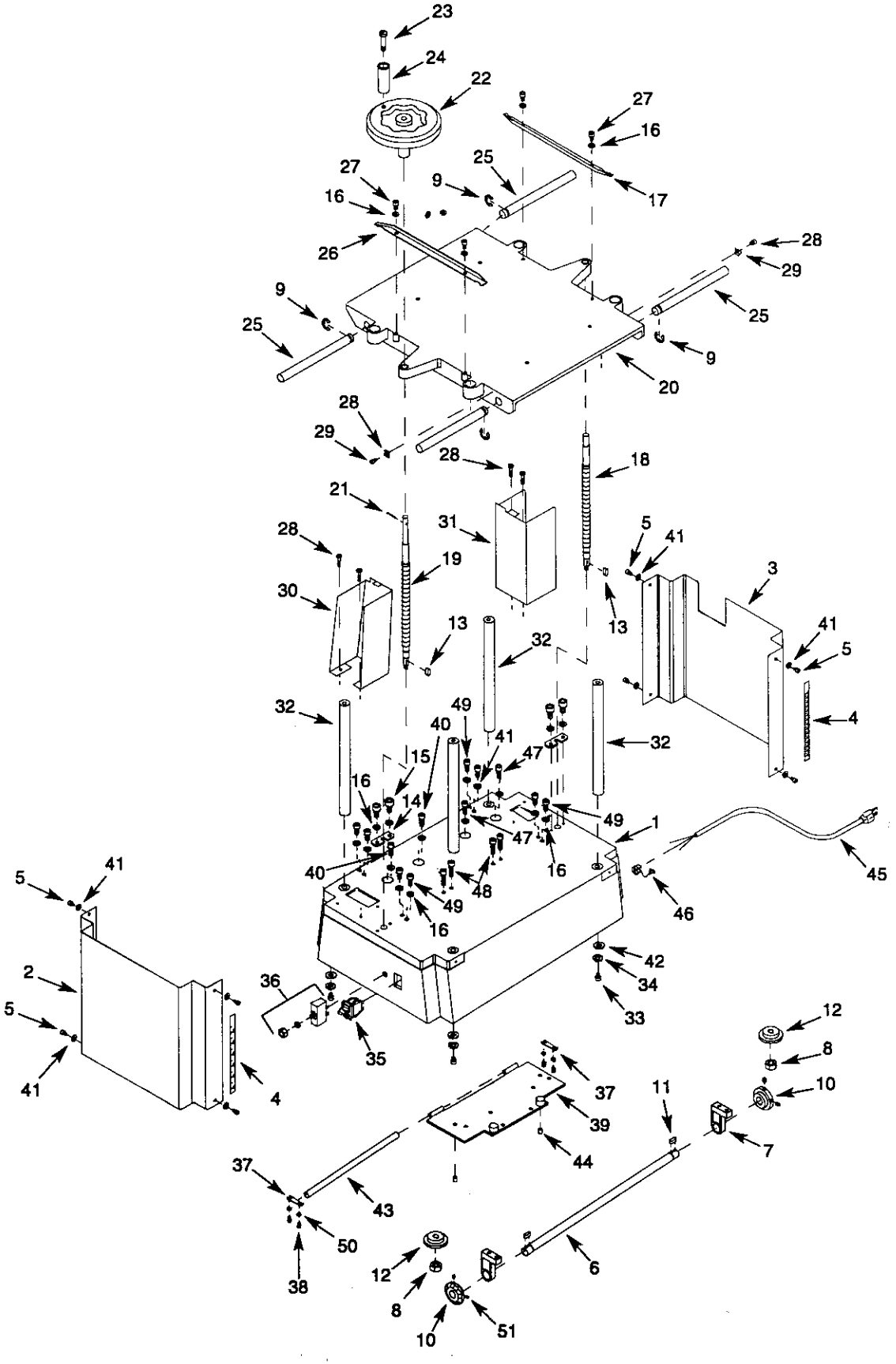


Figure 16 - Replacement Parts Illustration for Base

REPLACEMENT PARTS LIST FOR BASE

KEY NO.	PART NO.	DESCRIPTION	QTY.
1	9598.00	Base	1
2	8555.00	Cover (Left Side)	1
3	8556.00	Cover (Right Side)	1
4	8557.00	Scale (Set)	1
5	8662.00	6-1.0 x 8mm Socket Head Bolt	8
6	9510.00	Shaft	1
7	8559.00	Bracket	2
8	8529.00	8-1.25mm Nylon Insert Locknut	2
9	1510.00	3CMI-15 E-Ring	4
10	3818.00	Bevel Gear	2
11	1531.00	4 x 4 x 10mm Key	2
12	8531.00	Bevel Gear	2
13	3873.00	4 x 4 x 8mm Key	2
14	8561.00	Retaining Plate	2
15	1505.00	6-1.0 x 12mm Socket Head Bolt	4
16	STD852016	6mm Lock Washer*	20
17	8562.00	Right Guide Plate	1
18	8563.00	Elevation Screw	1
19	8564.00	Crank Elevation Screw	1
20	8565.00	Table	1
21	6164.00	3 x 25mm Spring Pin	1
22	8566.00	Handwheel	1
23	3821.00	Handle Screw	1
24	3820.00	Handle	1
25	7365.00	Lifting Bar	4
26	8568.00	Left Guide Plate	1
27	3812.00	6-1.0 x 10mm Pan Head Screw	4
28	0781.00	4-0.7 x 8mm Pan Head Screw	9

KEY NO.	PART NO.	DESCRIPTION	QTY.
29	8569.00	Indicator	1
30	8570.00	V-belt Guard	1
31	8571.00	Chain Guard	1
32	8572.00	Column	4
33	1822.00	8-1.25 x 20mm Socket Head Bolt	4
34	STD852008	8mm Lock Washer*	4
35	0423.00	Switch With Key	1
36	4287.00	Circuit Breaker	1
37	9511.00	Bracket	2
38	3855.00	5-0.8 x 10mm Socket Head Bolt	4
39	8574.01	Tension Plate	1
40	0179.00	6-1.0 x 20mm Socket Head Bolt	2
41	STD851006	6mm Flat Washer*	12
42	STD851010	8mm Flat Washer*	4
43	8579.00	Shaft	1
44	3886.00	Aligning Pin	2
45	8533.00	Line Cord	1
46	3984.00	Strain Relief	1
47	3180.00	6-1.6 x 20mm Thread Forming Screw	2
48	1775.00	6-1.0 x 25mm Socket Head Bolt	4
49	1760.00	6-1.0 x 16mm Socket Head Bolt	8
50	STD852005	5mm Lock Washer*	4
51	1043.00	6-1.0 x 8mm Set Screw	4

* Standard hardware item available locally

- Mantenga las manos alejadas de las partes móviles y de las superficies cortadoras.
- Nunca deje que una herramienta funcione sola. Desconéctela y no se vaya hasta que se detenga completamente.
- No trate de alcanzar demasiado lejos. Manténgase firme y equilibrado.
- Nunca se pare en la herramienta. Se pueden producir lesiones graves si la herramienta se inclina, o si se toca el disco o la correa por accidente.
- Conozca su herramienta. Aprenda la operación de la herramienta, aplicación y limitaciones específicas.
- Use los accesorios que se recomienda. (Refiérase a la página 17.) Si se usan accesorios incorrectos, se puede producir riesgo de lesiones personales.
- Deje las manos libres para operar la máquina. Protéjalas de posibles lesiones.
- Desconecte la máquina si se atasca. La cuchillo o la hoja se atasca cuando penetra demasiado profundamente en la pieza de trabajo. (La fuerza del motor la mantiene pegada a la pieza de trabajo.)
- Siempre mantenga el impulsor, el portacuchilla y las protecciones de las cuchillas en su lugar y en condiciones de operación adecuadas.
- Alimente el trabajo en la cuchilla o en la cortadora en contra de la dirección de rotación.

PRECAUCION: ¡Piense en la seguridad! La seguridad es una combinación de sentido común del operador y de estar alerta en todo momento cuando se está usando la herramienta.

ADVERTENCIA: No trate de operar la herramienta hasta que esté completamente montada según las instrucciones.

MONTAJE

Refiérase a las Figuras 15 y 16, páginas 16 y 18.

La cepilladora/moldeadora se envía montada, excepto por el volante y el mango (Figura 16, Clave Nos. 22 y 24).

INSTALACION DEL VOLANTE Y EL MANGO

Refiérase a la Figura 16, página 18.

- El volante (Clave No. 22) se tiene que instalar al lado izquierdo de la cepilladora/moldeadora.
- Alinee el mango (Clave No. 24) con el agujero en el aro del volante.
- Inserte el tornillo del mango (Clave No. 23) en el mango y apriételo en forma segura.
- Deslice el volante en el tornillo de elevación de la manivela (Clave No. 19) de modo que el pasador de resorte (Clave No. 21) en el tornillo de elevación de la manivela quede colocado entre la ranura y el volante.

REMOCION DE LAS TAPAS

Refiérase a la Figura 15, página 16.

La cepilladora/moldeadora se envía con las tapas (Clave No. 13) en los ejes roscados (Clave No. 11) para evitar el daño en los ejes durante el envío y el manejo.

- Desatornille y remueva las tapas antes de encender la herramienta.
- Guarde las tapas para uso en el futuro.

MONTAJE DE LA CEPILLADORA EN LA SUPERFICIE DE TRABAJO

Refiérase a la Figura 1.

- La cepilladora ha sido diseñada para que sea portátil de modo que se pueda llevar al lugar de trabajo, pero se tiene que montar en un banco o mesa estable y nivelada. Vea "Accesorios Recomendados", página 17.

INSTRUCCIONES DE MONTAJE PARA EL PEDESTAL OPCIONAL MODELO 22250

Refiérase a la Figura 1.

Lista de Materiales

- Tabla de partículas de 1,3 x 38,1 x 55,9 cm (no viene incluida)
- Cuatro pernos de 1/4 - 20 x 1¼" con arandelas y tuercas (no vienen incluidos) para el montaje de la tabla en el pedestal de propósito múltiple.
- Cuatro pernos de 8 - 1,25 x 30 mm con arandelas (vienen incluidos con la cepilladora/moldeadora) para montar la cepilladora/moldeadora en la tabla.

Se necesita una tabla de montaje cuando se monta la cepilladora/moldeadora en el pedestal de propósito múltiple, modelo 22250 Sears. La tabla de montaje está hecha de madera laminada de 11,3 cm de espesor o de partículas.

- Corte y perfore la tabla usando el dibujo. El agujero de 25,4 cm de diámetro en el centro se usa para ventilación solamente.
- Asegure primero la tabla de montaje en la parte superior del pedestal, usando cuatro pernos de ¼", arandelas y tuercas (no vienen incluidos). Asegúrese que la tabla quede centrada en la parte superior del pedestal y apernada en forma segura.
- Monte la cepilladora/moldeadora en la tabla de montaje usando los cuatro pernos de 8 - 1,25 x 30 mm con las arandelas. Atornille los pernos a través de la tabla de montaje y en la pieza fundida de la base desde la parte inferior de la tabla.

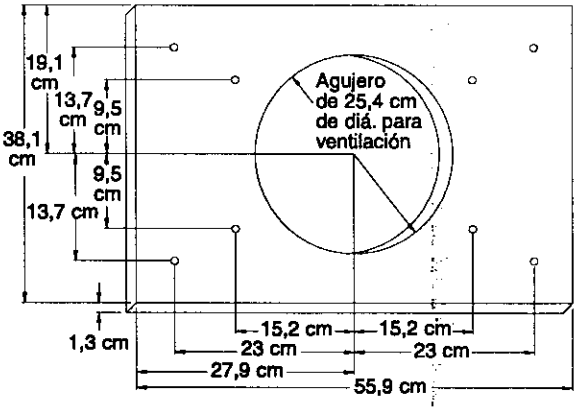


Figura 1 - Monte la Cepilladora/Moldeadora en el Pedestal de Propósito Múltiple Opcional Modelo No. 22250

INSTALACION

FUENTE DE ENERGIA

ADVERTENCIA: No conecte la cepilladora/moldeadora a la fuente de energía sino hasta después de que se hayan completado todos los pasos del montaje.

ESPAÑOL

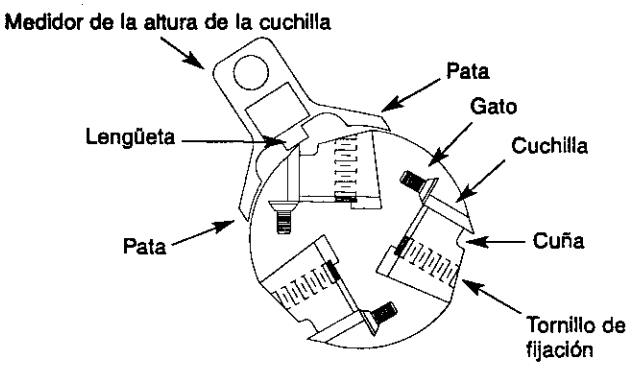


Figura 6 - Medidor de la Altura de la Cuchilla

COLOCACION DEL ROMPEDOR DE ASTILLAS

Refiérase a la Figura 15, página 16.

El rompedor de astillas (Clave No. 2) se usa para ayudar a remover las astillas de madera de las hojas cortadoras y de las cuchillas cuando se cepilla o moldea. Ajuste el rompedor de astillas cada vez que se cambien o ajusten las herramientas cortadoras.

El rompedor de astillas se tiene que colocar tan cerca del portacuchilla como sea posible sin entrar en contacto con las hojas cortadoras o las cuchillas. Suelte los tres pernos de cabeza hexagonal (Clave No. 3) que sujetan el rompedor de astillas y colóquelo tan cerca del portacuchilla como sea posible, rote el portacuchilla manualmente para asegurarse que no haya interferencia con el rompedor de astillas. Asegure el rompedor de astillas apretando los tres pernos de cabeza hexagonal. Vuelva a colocar y asegurar la cubierta de la cuchilla.

MOLDEO

El moldeo, que también se le conoce como fresado o acabado, se puede definir como el fresado de una franja de madera con una superficie simple o decorativa que es continua a través de toda su longitud.

- Para lograr un acabado de moldeo superior, la pieza de trabajo se tiene que cepillar y debe tener el tamaño adecuado antes del moldeo. Siempre haga que la pieza de trabajo tenga 1,6 mm de espesor adicional, antes del moldeo, comparado con el espesor final.

Ciertos perfiles de moldeo necesitan la limpieza del borde exterior. Cuando use dichos perfiles, la pieza de trabajo tiene que tener 3,2 mm de ancho adicional comparado con el ancho final. Esto permite limpiar 1,6 mm en cualquier lado.

Ciertos perfiles de moldeo sólo cortan el borde de la pieza de trabajo. Cuando se usen dichos perfiles, las piezas de trabajo tienen que ser del mismo ancho que el ancho final.

INSTALACION DE LAS HOJAS CORTADORAS

Refiérase a las Figuras 7, 8 y 15, páginas 26, 27 y 16.

AVISO: Las hojas cortadoras se montan en el centro del portacuchilla (Figura 15, Clave No. 39) usando las cuñas de las cuchillas de 5 cm (Figura 15, Clave No. 43) incluidas. Las hojas cortadoras y las hojas cepilladoras (Figura 15, Clave No. 40) se montan en el portacuchilla al mismo tiempo, de modo que las operaciones de cepillado y moldeo se puedan hacer con la misma preparación.

El medidor de ajuste de la cuchilla (vea la Figura 7) se usa cuando se montan las hojas moldeadoras de tres piezas en el portacuchilla de la cepilladora/moldeadora. El medidor alinea las hojas en el portacuchilla de modo que las tres corten la pieza de trabajo en la misma posición, ofreciendo cortes precisos y un mejor acabado de la superficie.

- Apague la cepilladora/moldeadora y desenchúfela de la fuente de energía.
- Remueva la cubierta de la cuchilla y el desviador de astillas (Figura 15, Clave Nos. 4 y 6).
- Use el perno de cabeza hueca de 6 mm (Figura 15, Clave No. 5) que se usó para montar la cubierta de la cuchilla, monte el medidor del ajuste de la cuchilla en la parte superior de la cepilladora/moldeadora tal como se muestra en la Figura 7.

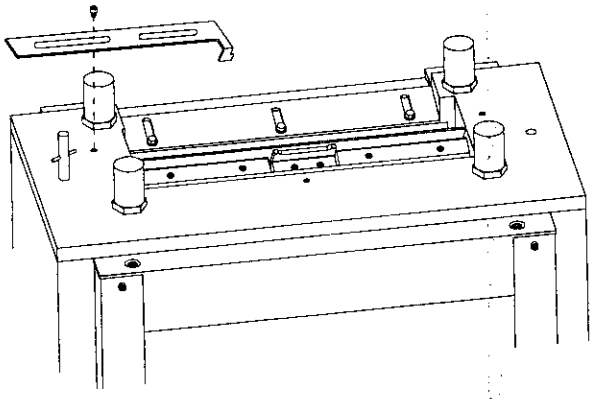
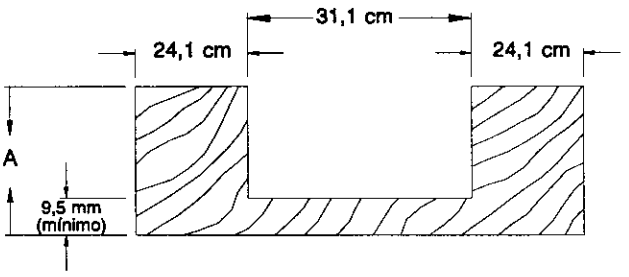


Figura 7 - Instalación de las Hojas Cortadoras y del Medidor de Ajuste de la Cuchilla

- Ponga el medidor de ajuste de la cuchilla de modo que las hojas moldeadoras queden colocadas en el portacuchilla según sea necesario. Apriete el perno de cabeza hueca de 6 mm.
- Suelte los dos tornillos de fijación (Figura 15, Clave No. 42) en la cuña de la hoja de 5 cm (Figura 15, Clave No. 43) ubicada en el centro del portacuchilla.
- Use el punzón de latón que viene en la bolsa de los artículos de ferretería para golpear suavemente la cuña hacia adentro de la ranura del portacuchilla.
- Golpee la cuña suavemente hasta que se suelte y pueda moverse.
- Remueva los espaciadores de 2,5 cm (Figura 15, Clave No. 44), según sea necesario.
- Asegúrese que la ranura del portacuchilla y las cuñas estén limpias y que no tengan mugre, grasa, astillas ni rebabas.
- Ponga las hojas cortadoras en la ranura del portacuchilla en lugar de los espaciadores.
- Inserte la primera hoja cortadora que se va a montar entre la cuña de la hoja y la cuchilla de la cepilladora.
- Deslice la hoja cortadora en contra del borde del medidor de ajuste de la hoja cortadora y apriete la combinación de la hoja cortadora/cuña de la hoja en el portacuchilla.
- Para montar más de una hoja cortadora en cada ranura del portacuchilla, por ejemplo, las hojas cortadoras de machihembra (23302), se necesita un conjunto adicional de tres cuñas de hoja. Use la lista de las partes de repuesto, página 17, Clave No. 43 para ordenarlas.
- Remueva una o ambas cuñas del portacuchilla (Figura 15, Clave No. 41), según sea necesario después de soltar los tornillos de fijación (Figura 15, Clave No. 42) y golpee suavemente las cuñas hacia abajo.
- Ponga la cuña de la hoja en la ranura del portacuchilla en la posición deseada.
- Inserte la hoja cortadora entre la cuña de la hoja y la cuchilla de la cepilladora y apriete la combinación de la hoja cortadora/cuña de la hoja.



"A" cambiará dependiendo del espesor de la pieza de trabajo acabada.

Figura 11 - Contraguía (Vista Lateral)

Para montar las contraguías en la mesa/mesa auxiliar:

- Instale las hojas/cuchillas cortadoras, moldeadoras, en el portacuchilla. Vea "Instalación de las Hojas Cortadoras" e "Instalación de las Cuchillas de Modelos".
- Baje la mesa y gire cuidadosamente el portacuchilla manualmente de modo que una hoja/cuchilla cortadora quede en el punto más bajo del borde cortador.
- Coloque la pieza de trabajo debajo de la hoja/cuchilla cortadora.
- Deslice hacia adentro la primera contraguía y coloque el borde interno del riel de guía con el borde externo de la pieza de trabajo.
- Sujete la contraguía en la mesa/mesa auxiliar usando las abrazaderas "C" en ambos extremos.
- Coloque la segunda contraguía en el otro lado de la pieza de trabajo y sujétela en la mesa/mesa auxiliar.
- Asegúrese que la pieza de trabajo se desliza entre las contraguías, uniformemente y sin atascarse.

CUCHILLAS DE RELIEVE

Muchas de las cuchillas de modelos de 6,4 mm vienen con las cuchillas de relieve. Las cuchillas de relieve se usan para cortar un relieve en la parte trasera del moldeo de modo que éste calce mejor en las superficies irregulares tales como las paredes de yeso.

Siempre corte el relieve primero antes de moldear la pieza de trabajo, de modo que quede una superficie plana en donde la pieza de trabajo se pueda deslizar durante la operación de moldeo. Si el moldeo se hace primero, la pieza de trabajo no quedará plana en la mesa de alimentación y por lo tanto no se puede cortar el relieve.

PREPARACION PARA EL MOLDEO

- Monte la mesa auxiliar en la mesa de hierro fundido.
- Instale las hojas/cuchillas cortadoras, moldeadoras, en el portacuchilla.
- Baje la mesa e inserte la pieza de trabajo relativamente con respecto a la posición de las hojas/cuchillas cortadoras.
- Instale las contraguías relativamente con respecto a la posición de la pieza de trabajo.
- Eleve la mesa hasta que la pieza de trabajo apenas entre en contacto con el rodillo de entrada.
- Registre la altura de la mesa tal como lo indica la escala.
- Baje la mesa y remueva la pieza de trabajo.
- Vuelva a elevar la mesa a la medida registrada. Continúe elevando la mesa una vuelta completa del volante. Registre la medida – ésta es la medida de la primera pasada.
- Encienda la cepilladora/moldeadora e inserte la pieza de trabajo hasta que el rodillo de alimentación empiece a mover la pieza de trabajo.

  AVISO: Cuando se usen ciertas hojas/cuchillas cortadoras, la pieza de trabajo puede alimentarse con un movimiento entrecortado. Si ésto sucede, gire el volante y eleve la mesa hasta que la pieza de trabajo se mueva uniformemente. Compare la medida de la primera pasada con la indicación presente.
- Si su moldeo exige varias pasadas, asegúrese de hacer pasar todo el material antes de cambiar la preparación para cada pasada. Esto asegurará la conformidad de la forma entre las piezas de trabajo.

MOLDEADO DE FRENTE

Refiérase a la Figura 12 a continuación.

AVISO: Siempre corte el relieve primero antes de moldear la pieza de trabajo.

- Monte las hojas cortadoras necesarias o las cuchillas de modelos en el portacuchilla de la cepilladora/moldeadora. (Vea "Instalación de las Hojas Cortadoras" o "Montaje de las Cuchillas de Modelos", páginas 26 y 27.)
- Ponga las contraguías en cada lado de las hojas o de la cuchilla en la posición deseada. (Vea "Contraguías", página 28.)

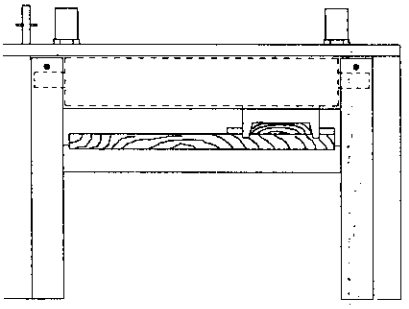


Figura 12 - Moldeado de Frente

MOLDEADO DE BORDE

Refiérase a la Figura 13 a continuación.

Los bordes de la pieza de trabajo se pueden moldear alimentando la pieza de trabajo en su borde en la cepilladora/moldeadora.

Las contraguías que son 1,9 cm más cortas que la pieza de trabajo se tienen que colocar en los lados de la pieza de trabajo. Asegúrese que la pieza de trabajo esté apoyada rígidamente en ambos lados con las contraguías directamente debajo de las hojas o cuchillas cortadoras.

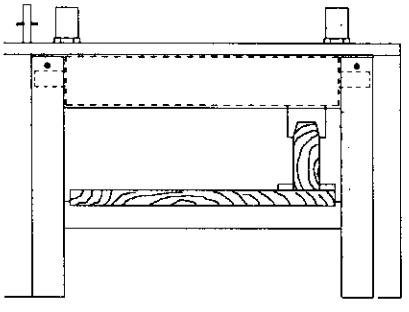


Figura 13 - Moldeado de Borde

IDENTIFICACION DE PROBLEMAS

SINTOMA	CAUSA(S) POSIBLE(S)	MEDIDA CORRECTIVA
Redondeo excesivo (muescas en los extremos de la tabla)	1. Cuchillas desafiladas 2. Soporte incorrecto de las tablas largas 3. Presión del rodillo de alimentación dispareja 4. La mesa no está alineada 5. La madera no topa correctamente 6. Los rodillos de soporte están desalineados	1. Cambie las cuchillas según las instrucciones, vea "Operación" 2. Soporte las tablas largas 3. Revise la operación del rodillo de alimentación 4. Revise la posición de los tornillos de elevación 5. Haga que las piezas de material topen extremo con extremo a medida que las tablas pasan a través de la cepilladora/moldeadora 6. Ajuste los rodillos de soporte
Veta vellosa	Se está cepillando madera con un alto contenido de humedad	Remueva el alto contenido de humedad de la madera, secándola
Veta desgarrada	1. Corte muy pesado 2. Las cuchillas están cortando en contra de la veta 3. Cuchillas desafiladas	1. Revise "Profundidad del Corte" 2. Revise "Veta de la Madera" 3. Cambie las cuchillas según las instrucciones, vea "Ajuste de la Altura de la Cuchilla"
Veta elevada áspera	1. Cuchillas desafiladas 2. Corte muy pesado 3. Contenido de humedad muy alto	1. Cambie las cuchillas según las instrucciones, vea "Ajuste de la Altura de la Cuchilla" 2. Revise "Profundidad del Corte" 3. Seque la madera o use madera seca
Dificultad al elevar/bajar la mesa	El portacuchilla no está paralelo con la mesa	Ajuste los tornillos de elevación, vea "Ajuste de la Profundidad del Corte"
Profundidad dispareja del corte (corte ahusado)	El portacuchilla no está paralelo con la mesa	Ajuste los tornillos de elevación, vea "Ajuste de la Profundidad del Corte"
La correa se resbala	Correa suelta	Tense o cambie la correa, vea "Ajuste de la Correa V"
La cepilladora/ moldeadora no opera	1. La energía no llega a la cepilladora/ moldeadora 2. La protección contra la sobrecarga del motor se disparó 3. Interruptor o cableado defectuoso o suelto	1. Haga que un electricista calificado revise la fuente de energía 2. Reajuste la protección de sobrecarga del motor, vea "Reajuste de Sobrecarga" 3. Haga que un electricista calificado revise el interruptor o el cableado
Las tablas se resbalan y no entran	Los rodillos de alimentación están demasiado altos	Baje los rodillos de alimentación, vea "Ajuste de los Rodillos de Alimentación"
La tabla entra pero no se corta	Los rodillos de alimentación están demasiado bajos	Eleve los rodillos de alimentación, vea "Ajuste de los Rodillos de Alimentación"
La tabla entra para dejar de moverse cuando pasa los rodillos de salida	1. Los rodillos de salida están demasiado altos 2. Los rodillos de salida no pueden rotar debido al atascamiento de las astillas	1. Bájelos al nivel de los de entrada, vea "Ajuste de los Rodillos de Alimentación" 2. Despeje el atascamiento, use el canal de astillas del colector de polvo, vea "Accesorios Recomendados", página 17
No se puede remover la cuchilla de la cepillado-ra/moldeadora	Las cuñas no están sueltas	Suelte los tornillos de fijación en las cuñas y golpee suavemente hacia abajo todas las cuñas

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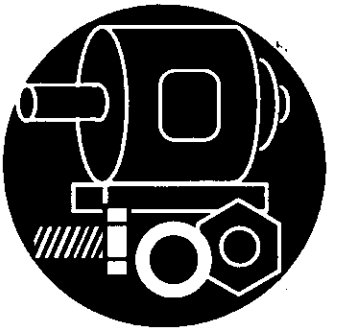

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